

Specifically, Claims 1 and 9 have been amended to recite that a silver salt, a gold salt or combination thereof is present in a mercury vapor discharge lamp in a concentration in a range of between about 0.1 milligram and about 30 milligrams per lamp.

It is emphasized that this concentration range is fully supported by the originally filed specification. The lower limitation of silver salt, gold salt or combination thereof is recited in Paragraph 0015 to be about 0.1 milligram per lamp. The preferred range recites an upper limit of 30 milligrams per lamp. As such, the minimum and maximum concentration of the claimed range is set forth in the originally filed specification.

It is emphasized that it is not necessary that an application describe claim language exactly. All that is required is that applicants establish they had possession of the claimed invention as recited by the aforementioned ranges. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976).

The aforementioned amendment to Claims 1 and 9 require the cancellation of Claims 5 and 13. These claims recite a range outside the range of the amended broadest claims of the present application.

Three substantive grounds of rejection are imposed in the outstanding Official Action. The first of these is directed to Claims 1, 2, 5, 7, 9, 10, 13 and 15. These claims stand rejected, under 35 U.S.C. §102(b), as being anticipated by U.S. Patent 5,986,405 to De Maagt et al.

Although the amendment to Claim 1 makes moot the basis for rejection of original Claim 1 in the outstanding Official Action, it is important to address the assumption made in that rejection. That is, the Official Action argues that De Maagt et al. discloses a mercury vapor discharge lamp which comprises a silver salt.

It is true that Column 5, line 30 recites that the lamp of De Maagt et al. includes a silver salt. However, it is not true that Column 5, line 11 recites that De Maagt et al. discloses that that silver salt is included in a mercury vapor discharge lamp.

As set forth in the specification of the present application, and as known by those skilled in the art, a mercury vapor discharge lamp is more commonly referred to as a fluorescent lamp. Indeed a definition of a mercury vapor discharge lamp is provided in the specification at Paragraph 0002.

The high pressure discharge lamp of De Maagt et al. is not a mercury vapor discharge lamp. Those skilled in the art are aware that high pressure discharge lamps are distinguished from fluorescent lamps insofar as they are operated at higher pressures and involve differing means of providing illumination. In a mercury vapor discharge lamp electrons activate mercury which, in turn, activates phosphors which provides illuminating light. In a high pressure discharge lamp of the type taught by De Maagt et al. a complex mixture of metal halides, usually metal iodides, are activated by electrons and it is the metal halides that provide illumination. Optionally, mercury may be present in a high pressure discharge lamp, such as is the case in De Maagt et al., but, because of its higher pressure and greater illuminating capacity, if mercury is present, it is present in much higher concentration than the concentration of mercury present in a mercury vapor discharge lamp.

This point is raised insofar as the Official Action emphasizes that the utility of silver oxide in the De Maagt et al. high pressure discharge lamp is to prevent blackening of the outer envelope of the high pressure discharge lamp. Without going into the details of how this is accomplished, it suffices to say that the use of silver oxide is instrumental in this effect. However, the Official Action, citing Ex parte Masham, USPQ2d 1647 (1987), argues that a

claimed apparatus which distinguishes over a prior art apparatus only insofar as its utility is concerned does not obviate anticipation.

The amended claims of the present application, however, recite a concentration range of silver salt, gold salt or combination thereof outside the range recited in the De Maagt et al. disclosure. As stated in the Official Action, the silver salt, silver oxide, recited in De Maagt et al., at Column 5, line 39, is present in a concentration of 60 milligrams per lamp. Insofar as the broadest claims in the present application, amended Claims 1 and 9, recite a maximum concentration of 30 milligrams per lamp, half the recited concentration of silver oxide in De Maagt et al., it is apparent that this reference does not anticipate any of the claims of the present application.

The earlier remarks were provided to rebut any argument that De Maagt et al. makes obvious any of these claims. The clearly distinguished nature of a mercury vapor discharge lamp, requiring far lower concentration of silver salt, gold salt, or a combination thereof to insure environmental protection for mercury vapor discharge lamps, establishes that the teaching of De Maagt et al., directed to a high pressure discharge lamp, would not make obvious the claims of the present application.

The second substantive ground of rejection is the rejection of Claims 1, 2, 4, 9, 10 and 12, under 35 U.S.C. §102(b), as being anticipated by U.S. Patent 5,972,442 to Anderson et al.

At the outset, the earlier remarks directed to De Maagt et al. apply equally to Anderson et al. Anderson et al. is directed also to a high pressure metal halide discharge lamp distinguished from the claimed mercury vapor discharge lamps, commonly referred to as fluorescent lamps, of the present application.

The metal halides employed in the lamps taught in Anderson et al. are the illuminating agents for the high pressure discharge lamps disclosed therein. It is true that Column 4, lines 48-53 of Anderson et al. recites that the lamps may include silver or gold halides which, admittedly, are silver salts and gold salts. However, as discussed above, the purpose of using these materials is far removed for the purpose of the present application.

Applicants concede the pertinence of Masham. However, they respectfully aver that the disclosure in Anderson et al. does not anticipate any of the claims of the present application. It is axiomatic that an anticipatory reference must disclose each and every limitation of the claims subject to rejection. There is no disclosure of a concentration range of any of the silver or gold salts present in the Anderson et al. lamp. The recitation of an approximate concentration of silver moniodide of about 1 mol percent provides no teaching, in the absence of the total constituency of the lamp, of its concentration.

Those skilled in the art, however, as stated above, appreciate that if silver iodide is present, it is present in a concentration in an amount that would require a total concentration of silver iodide far in excess of the concentration range of the claims of the present application.

The above remarks are, in effect, conceded by the outstanding Official Action insofar as the claims subject to this ground of rejection do not include any of the original claims which recited silver salt, gold salt or combination thereof concentration ranges. Thus, original Claims 5, 6, 13 and 14, which recited concentration ranges, were not subject to this ground of rejection. Thus, the amended claims of the present application are clearly patentable over this ground of rejection.

The third ground of rejection is directed to Claims 6 and 14. These claims stand rejected, under 35 U.S.C. §103(a), as being unpatentable over De Maagt et al.

In asserting this ground of rejection, the Official Action admits that the recitation of a silver salt, gold salt or combination thereof in a range of between about 10 mg and about 30 mg per lamp is not disclosed by De Maagt et al. It is at this point that the Official Action contradicts itself. This is so insofar as the Official Action states that De Maagt et al. teaches that the amount of silver oxide is not critical; the amount may be influenced by the dimensions of the lamp, its production process and the presence of coatings inside the envelope.

Applicants respectfully assert the clearly distinguished nature of a mercury vapor discharge lamp and a high pressure lamp taught by De Maagt et al., *supra*. It would not be obvious to one skilled in the art to utilize the much lower concentration of silver salt, gold salt or combination thereof in De Maagt et al. given its totally distinguished nature and the purpose for which it is added. In the present invention the small concentration of silver and/or gold salt is provided to effectuate safe environmental disposal of fluorescent lamps which contain highly toxic mercury.

It can hardly be argued that the teaching of De Maagt et al. makes obvious the claimed concentration range of the amended claims of the present application insofar as its teaching is that the amount of silver oxide is not critical. However, this statement makes important the context of for what the silver oxide is employed. The amount of silver oxide is not critical to the clearly distinguished purpose of its use in De Maagt et al.

The Official Action, citing Marsham, argues that it is the limitations recited in claims that predicate patentability, not the reason for these limitations. However, the



## APPENDIX

### RENDITION OF APPLICATION AMENDMENT SHOWING CHANGES MADE

#### IN THE CLAIMS:

Claim 1 (Amended): A mercury vapor discharge lamp comprising [an effective amount of] a silver salt, a gold salt or combination thereof present in a concentration in a range of between about 0.1 milligram and about 30 milligrams per lamp.

Claim 9 (Amended): A method for preventing the formation of leachable mercury compounds in mercury vapor discharge lamps comprising providing, in [the] a mercury discharge lamp structure, [an effective amount] between about 0.1 milligram and about 30 milligrams of a silver salt, a gold salt[,] or combination thereof.

limitations of the recited concentrations in the amended claims of this application are not disclosed in De Maagt et al. Thus, the teaching of De Maagt et al. does not only not disclose the concentrations of silver and/or gold salt claimed in the present application but, moreover, does not disclose, suggest or even hint at the purpose of its addition. As such, none of the amended claims are made obvious by De Maagt et al.

The above amendment and remarks establish the patentable nature of all the claims currently in this application. Notice of Allowance and passage to issue of these claims, Claims 1-4, 6-12 and 14-16, is respectfully solicited.

Respectfully submitted,



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